

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for fabrication of ferroelectric capacitor elements of an integrated circuit comprising ~~the steps of~~:
deposition of an electrically conductive bottom electrode layer;
deposition of a layer of ferroelectric dielectric material;
annealing the layer of ferroelectric dielectric material to form perovskite phases with a first anneal at a first temperature;
deposition of an electrically conductive top electrode layer;
annealing the layer of ferroelectric dielectric material with a second anneal at a second temperature higher than the first temperature, the second anneal changing the layer of ferroelectric material into grains having a columnar structure, being performed by rapid thermal annealing and performed after the step of deposition of an electrically conductive top electrode layer~~[:]~~
~~etching the electrically conductive top electrode layer; and~~
~~annealing the layer of ferroelectric dielectric material with another anneal after etching the electrically conductive top electrode layer.~~
2. (Original) The process of Claim 1, wherein the electrically conductive bottom electrode layer comprises a noble metal.
3. (Original) The process of Claim 2, wherein the electrically conductive bottom electrode layer comprises platinum.
4. (Original) The process of Claim 1, wherein the ferroelectric dielectric layer comprises PZT.

5. (Original) The process of Claim 1 wherein the electrically conductive top electrode layer comprises a noble metal oxide.
6. (Original) The process of Claim 5 wherein the electrically conductive top electrode layer comprises Iridium Oxide.
7. (Original) The process of Claim 5 wherein the first anneal comprises a rapid thermal anneal at a temperature between five hundred twenty five and six hundred degrees celsius.
8. (Currently Amended) The process of Claim 1 [[7]], wherein the first anneal is performed ~~by rapid thermal annealing at a temperature of approximately five hundred seventy five degrees celsius for a time between sixty and one hundred twenty seconds.~~
9. (Original) The process of Claim 7 wherein the second anneal is performed at a temperature of between seven hundred and seven hundred fifty degrees celsius.
10. (Original) The process of Claim 9, wherein the second anneal is performed at a temperature of approximately seven hundred twenty five degrees celsius for a duration of greater than ten seconds.
11. (Canceled)
12. (Currently Amended) A method for fabrication of ferroelectric capacitor elements of an integrated circuit comprising the steps of:
 - deposition of an electrically conductive bottom electrode layer comprising a noble metal;
 - deposition of a layer of ferroelectric dielectric material;
 - annealing the layer of ferroelectric dielectric material to form perovskite phases with a first anneal in an environment comprising oxygen at a first partial pressure;

deposition of an electrically conductive top electrode layer comprising a noble metal oxide; and

annealing the layer of ferroelectric dielectric material with a second anneal, the second anneal changing the layer of ferroelectric material into grains having a columnar structure, being performed in an environment comprising a mixture of oxygen and inert gas, the oxygen having a second partial pressure [[of]] less than the first partial pressure five percent of one atmosphere and performed after the step of deposition of an electrically conductive top electrode layer.

13. (Canceled)

14. (Currently Amended) The process of Claim 12, wherein the second anneal is performed by rapid thermal annealing ferroelectric dielectric layer comprises PZT.

15. (Currently Amended) The process of Claim 12 wherein the first anneal is performed in an environment comprising oxygen, the oxygen having partial pressure is [[of]] less than ten percent of one atmosphere.

16. (Currently Amended) The process of Claim 12 [[15]] wherein the first anneal is performed by rapid thermal annealing in an environment comprising oxygen at a partial pressure of approximately five percent.

17. (Currently Amended) The process of Claim 12 [[15]] wherein the second [[first]] anneal is performed in an environment comprising a mixture of oxygen and inert gas.

18. (Canceled)

19. (Currently Amended) The process of Claim 12 wherein the second anneal is performed in an environment comprising oxygen at a partial pressure is less than five percent of approximately one atmosphere percent.

20. (Previously presented) The process of Claim 12 wherein the first anneal is performed in an environment comprising a mixture of oxygen and inert gas.

21. (Canceled)
22. (Currently Amended) The process of Claim 12 [[21]] wherein the second anneal is performed at a temperature of between seven hundred and seven hundred fifty degrees celsius for a time not less than ten seconds.
23. (Canceled)
24. (Currently Amended) The process of Claim 12 [[23]] wherein the step of depositing the ferroelectric dielectric layer is performed by sputtering.
25. (Canceled)
26. (Canceled)
27. (Currently Amended) A method for fabrication of ferroelectric capacitor elements of an integrated circuit comprising ~~the steps of:~~
 - deposition of an electrically conductive bottom electrode layer comprising a noble metal;
 - deposition of a layer of ferroelectric dielectric material by a sputtering method;
 - annealing the layer of ferroelectric dielectric material to form perovskite phases with a first anneal at a first temperature;
 - deposition of an electrically conductive top electrode layer comprising a noble metal oxide; and
 - annealing the layer of ferroelectric dielectric material with a second anneal at a second temperature higher than the first temperature, the second anneal changing the layer of ferroelectric material into grains having a columnar structure, being performed by rapid thermal annealing and performed after the step of deposition of an electrically conductive top electrode layer.

Claims 28 - 31 (Canceled)